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ZECHER, MICHAEL R				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/692,067

Applicant(s)

TULLY ET AL.

Examiner

MICHAEL R. ZECHER

Art Unit

3691

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 06 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35, 82-86 and 91-97 is/are pending in the application.
- 4a) Of the above claim(s) 36-81 & 87-90 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35, 82-86 and 91-97 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 4/6/2005.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. The following is a second, non-final Office Action on the merits. The Amendment/Remarks received on October 6, 2008, have been entered. **Claims 1, 20, & 22** have been amended. **Claims 91-97** have been added. **Claims 1-35, 82-86, & 91-97** are pending.

Information Disclosure Statement

2. Due to extremely voluminous prior art citation by the Applicants, the Examiner invited the Applicants to provide comments regarding the most relevant pieces of prior art including how the claims of the instant application are patentable over those relevant pieces. The Applicant refused the Examiner's invitation. Therefore, in accordance with MPEP § 609, the Examiner has considered the title of all citations submitted in the Information Disclosure Statement filed on April 6, 2005.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 82-86** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 82 recites in the preamble "In an automated financial instrument brokerage system configured... a method comprising." It is unclear whether **claim 82** is a system or method claim. Clarification is required. For examination purposes, Examiner has construed **claim 82** as a method claim.

Claims 83-86 are dependent from claim 82 and stand rejected under the same rationale set forth above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-11, 16, 18, 20, 21, 27-32, 34-35, & 94-97** are rejected under 35 U.S.C. 103(a) as being unpatentable by Mulinder et al. (U.S. 2002/0073018).

As per claim 1, Mulinder et al. teaches an automated brokerage system for processing activity requests related to financial instruments (See abstract, which discusses a system for real-time trading services), the system comprising:

a plurality of applications configured to generate activity requests related to one or more financial instruments in response to input from remote users (See paragraphs 9 & 45, which discusses multiple applications, including a price request application program interface for trading securities);

a plurality of intermediate layer servers for processing the generated activity requests, the intermediate layer servers being configured to provide a set of services in connection with the processing of the activity requests (See paragraphs 9 & 43, which discusses various servers and modules); and

a data source configured to provide financial instrument quote data, a data repository configured to store customer account data, and an order placement system

configured to place one or more orders on a financial instrument trading market, the one or more orders being derived from at least one received activity request (See paragraph 64, which discusses using a conventional database management system); and

wherein the intermediate layer servers are configured to interact with the back end layer data source, the back end layer data repository, and the back end layer order placement system as necessary to process the received activity requests (See figures 1 & 2, which illustrates a system for providing trading services).

Mulinder et al. discloses all the elements of the claimed invention, however, Mulinder et al. does not disclose a front end layer, an intermediate layer, and a back end layer.

It would have been an obvious matter of design choice to include multiple layers: a front end layer, an intermediate layer, and a back end layer, since Applicant has not disclosed that adding a front end layer, an intermediate layer, or a back end layer is for any particular purpose, and it appears that the invention would perform equally well with one layer containing multiple applications, servers, and memory. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include multiple layers with multiple applications, servers, and data sources in order to allocate the tasks to various applications and servers to help reduce bandwidth bottlenecks and to help increase the benefits from economies of scale in addition to offering increased security, excellent data management, fast response, and room for expansion.

As per claim 2, Mulinder et al. teaches wherein the intermediate layer servers comprise a plurality of dedicated servers, each dedicated server being configured to provide a different set of services in connection with the processing of the activity requests (See paragraph 43, which discusses numerous servers and modules interacting to perform trading services).

As per claim 3, Mulinder et al. teaches wherein the intermediate layer dedicated servers comprise:

- at least one order server configured to receive and process order activity requests from the front end layer (See paragraphs 12 & 44, which discusses processing a trade in a security);

- at least one customer account server configured to receive and process customer account activity requests from the front end layer, wherein the processing of customer account activity requests includes interacting with the back end layer data repository to retrieve customer account data therefrom and providing the retrieved customer account data to the front end applications for display to the users (See paragraphs 13 & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account); and

- at least one quote server configured to receive and process quote activity requests from the front end layer, wherein the processing of quote activity requests includes interacting with the back end layer data source to retrieve the financial instrument quote data therefrom and providing the retrieved financial instrument quote data to the front layer applications for display to the users (See paragraph 11-13 & 43-

44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration).

As per claim 4, Mulinder et al. teaches wherein the order server is further configured to interact with the customer account server to obtain customer account data therefrom (See paragraph 50, which discusses processing a transaction utilizing client account information).

As per claim 5, Mulinder et al. teaches wherein the order server is further configured to interact with the quote server to obtain financial instrument activity requests (See paragraph 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration, when processing a trade in a security).

As per claim 6, Mulinder et al. teaches wherein the intermediate layer further comprises a database schema configured to store data related to receive activity requests (See paragraph 13, 49, & 64, which discusses a conventional database management system; and, furthermore, monitoring a clients trading patterns and market activity, thereby creating a client account).

As per claim 7, Mulinder et al. teaches wherein the database schema (See paragraph 64, which discusses using a conventional database management system) comprises:

at least one customer database for storing customer-specific data (See paragraphs 13 & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account); and

at least one order database for storing order-specific data (See paragraphs 12 & 44, which discusses processing a trade in a security).

As per claim 8, Mulinder et al. teaches wherein the database schema further comprises at least one trading administration database for storing administrative restrictions related to activity requests (See paragraphs 46 & 49, which discusses spread rules and dealer intervention rules).

As per claim 9, Mulinder et al. teaches wherein the database schema further comprises a plurality of the customers databases, a plurality of the orders databases, and a plurality of the trading administration databases (See paragraphs 12, 13, 44, 49, & 64, which discusses a conventional database management system; and, furthermore, monitoring a clients trading patterns and market activity, thereby creating a client account, when processing a trade in a security).

As per claim 10, Mulinder et al. teaches an administrator interface for controlling the content of the trading administration database (See paragraphs 44 & 54, which discusses a flow manager who coordinates and processes trades).

As per claim 11, Mulinder et al. teaches wherein the administrator interface is configured to provide an administrator with control over restrictions on at least one of the group consisting of a financial instrument-specific basis, a trading market-specific bases, and an option-specific basis (See paragraphs 44 & 54 which discusses a flow manager who coordinates and processes trades based on risk analysis and market volatility).

As per claim 16, Mulinder et al. teaches wherein the customer account server include memory resident thereon for storing customer account data that has previously been retrieved from the back end data repository (See paragraphs 13, 43, & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account; and, furthermore, a communication server that manages access to trading date; it is inherent the system contains memory), and wherein the customer account server is further configured to utilize the customer account data that has been stored in the resident memory according to predetermined criteria when processing customer account activity requests (See paragraphs 49 & 50, which discusses client information in relation to dealer intervention rules, including credit related factors).

Claim 18 recites equivalent limitations to claim 16 and is therefore rejected using the same art and rationale set forth above.

As per claim 20, Mulinder et al. teaches wherein the front end layer and the intermediate layer communicate with each other according to the Internet Protocol Suite (TCP/IP) protocol (See paragraph 43, which discusses communications protocol, including the internet).

Claim 21 recites equivalent limitations to claim 20 and is therefore rejected using the same art and rationale set forth above.

As per claim 27, Mulinder et al. teaches wherein the back end data source comprises at least one quote feed, the at least one quote feed providing quote data in a data format to the quote server, and wherein the quote server is further configured to convert the received quote data to an internal data format upon receipt thereof (See

paragraphs 11-13, 43-44, & 46 which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration; and, furthermore, utilizing a number of factors when describing price quote generation).

As per claim 28, Mulinder et al. teaches wherein the back end data source comprises a plurality of quote feeds, at least two of the quote feeds providing quote data in different data formats, and wherein the quote server is further configured to convert quote data received from each of the quote feeds to the internal data format upon receipt thereof (See paragraphs 11-13, 43-44, & 46, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration; and, furthermore, utilizing a number of factors when describing the price quote generation factor).

As per claim 29, Mulinder et al. teaches wherein the quote data comprises a plurality of quote data types (See paragraphs 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration), and wherein the system further comprises an administrator interface configured to select, in response to administrator input, which of a plurality of quote feeds are to be used for receiving each of the plurality of quote data types (See paragraph 44, which discusses how a dealer intervention module may be used by a trader to control the pricing and trading activity).

As per claim 30, Mulinder et al. teaches wherein the back end layer further comprises a plurality of the data repositories, and wherein the intermediate layer servers are configured to interact with both the back end data repositories when

processing activity requests (See paragraph 64, which discusses using a conventional database management system).

As per claim 31, Mulinder et al. teaches an approval desk interface configured to provide a person with control over whether to approve or reject order activity requests routed thereto, and wherein the order server is further configured to determine whether an activity request is to be routed to the approval desk (See paragraph 51, which discusses how the trader may reject or modify the price request).

As per claim 32, Mulinder et al. teaches an automated brokerage system (See abstract, which discusses a system for real-time trading services), the system comprising:

a plurality of applications configured to generate activity requests related to one or more financial instruments in response to input from remote users, the activity requests comprising any of the group consisting of order activity requests, customer account activity requests, and quote activity requests (See paragraphs 9 & 45, which discusses multiple applications, including a price request application program interface for trading securities);

at least one order server configured to process the order activity requests (See paragraphs 12 & 44, which discusses processing a trade in a security);

at least one customer account server configured to process the customer account activity requests (See paragraphs 13 & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account);

at least one quote server configured to process the quote activity requests (See paragraphs 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration);

at least one quote data source in communication with the at least one quote server, the quote data source being configured to provide financial instrument quote data to the quote server (See paragraphs 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration, when processing a trade in a security);

at least one data repository in communication with the at least one customer account server and the at least one order server, the data repository being configured to store customer account data and provide stored customer account data to the customer account server (See paragraphs 50 & 64, which discusses using a conventional database management system and processing a transaction utilizing client account information); and

at least one order placement system in communication with the order server, the order placement system being configured to place one or more orders received from the order server on a financial instrument trading market, the one or more orders being derived from at least one order activity request (See figures 1 & 2, which illustrates the system for providing trading services).

Mulinder et al. discloses all the elements of the claimed invention, however, Mulinder et al. does not disclose utilizing multiple servers and a respective placement system.

It would have been an obvious matter of design choice to include multiple servers: order server, customer server, quote server, and a placement system, since Applicant has not disclosed that adding an order server, customer server, quote server, and a placement system is for any particular purpose, and it appears that the invention would perform equally well with one server/system containing multiple applications. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include multiple servers with multiple applications and data sources in order to allocate the tasks to various applications and servers to help reduce bandwidth bottlenecks and to help increase the benefits from economies of scale in addition to offering increased security, excellent data management, fast response, and room for expansion.

Claim 34 recites equivalent limitations to claim 16 and is therefore rejected using the same art and rationale set forth above.

As per claim 35, Mulinder et al. teaches wherein the order server is further configured to, when processing order activity requests, generate quote activity requests for communication to the quote server, and wherein the quote server is further configured to provide quote data that has been obtained in response to the quote activity request received from the order server to the order server (See paragraphs 11-13 & 43-44, which discusses processing a trade in a security requests and a quote engine capable of providing a plurality of quotes, each of which has a specified duration).

As per claim 94, Mulinder et al. teaches wherein the front end layer comprises at least one front-end server, the at least one front-end server being configured to execute the plurality of applications (See paragraphs 9 & 43, which discusses a server and multiple applications).

As per claim 95, Mulinder et al. teaches wherein the at least one front-end server is further configured to distribute activity requests to the plurality of intermediate layer servers based an activity request type (See paragraphs 19-23, which discusses various requests, including a price request and block trade request).

As per claim 96, Mulinder et al. does not disclose wherein the customer account server comprises a web-to-back office (WBO) server that acts as a gateway between the back end layer of the system and a customer using a website provided by the front end layer.

It would have been an obvious matter of design choice to add a web-to-back office server (WBO), since Applicant has not disclosed that adding an WBO server is for any particular purpose, and it appears that the invention would perform equally well with one server/system containing multiple applications. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include multiple servers with multiple applications and data sources in order to allocate the tasks to various applications and servers to help reduce bandwidth bottlenecks and to help increase the benefits from economies of scale in addition to offering increased security, excellent data management, fast response, and room for expansion.

As per claim 97, Mulinder et al. teaches wherein the customer account server is further configured to (1) check the application-in-memory cache for fresh customer account data when processing an activity request before accessing the back end data repository for such customer account data, (2) use the fresh customer account data to process that activity request if the fresh customer account data is present in the application-in-memory cache, and (3) access the back end data repository for such customer account data if fresh customer account data is not present in the application-in-memory cache (See figure 6, and paragraph 6, which illustrates and discusses processing a trade request; and, furthermore, how it is well known in the art to automatically update data or requests).

7. **Claims 12-15 & 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulinder et al. (U.S. 2002/0073018), and further in view of Bowman-Amuah (U.S. 6,578,068).

As per claim 12, Mulinder et al. teaches wherein the intermediate layer further comprises: a plurality of the order servers (See paragraphs 12 & 44, which discusses processing a trade in a security).

However, Mulinder et al. does not disclose a load balancer that interfaces with the front end applications with the plurality of order servers, the load balancer being configured to distribute order activity requests among the plurality of order servers.

Bowman-Amuah discloses a system and method for distributing information amongst a client and server components for optimizing usage of resources.

Both Mulinder et al. and Bowman-Amuah disclose methods and systems for distributing information within a trading or ordering contexts. Bowman-Amuah discloses a load balancer that mediates the request, otherwise known as workload balancing (See figure 151 and column 98, lines 22-49, which discusses how load balancing functionality effectively reduces the number of connections to databases, conserves the resources of the data servers, and increases throughput of the system). Therefore, it would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a load balancer capable of distributing ordering activity requests over a plurality of servers as taught by Bowman-Amuah in order to combine the known features of trading systems and load balancing to achieve the predictable result of utilizing load balancing in a trading system to conserve resources and increase throughput.

As per claim 13, Mulinder et al. teaches wherein the intermediate layer further comprises: a plurality of the customer account servers (See paragraph 13 & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account).

However, Mulinder et al. does not disclose a load balancer that interfaces the front end applications with the plurality of customer account servers, the load balancer being configured to distribute customer account activity requests among the plurality of customer account servers.

Bowman-Amuah discloses a load balancer that mediates the request, otherwise known as workload balancing (See figure 151 and column 98, lines 22-49, which

discusses how load balancing functionality effectively reduces the number of connections to databases, conserves the resources of the data servers, and increases throughput of the system). Therefore, it would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a load balancer capable of distributing customer activity requests over a plurality of servers as taught by Bowman-Amuah in order to combine the known features of trading systems and load balancing to achieve the predictable result of utilizing load balancing in a trading system to conserve resources and increase throughput.

As per claim 14, Mulinder et al. teaches wherein the intermediate layer further comprises: a plurality of the quote servers (See paragraph 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration).

However, Mulinder et al. does not disclose a load balancer that interfaces with the front end applications with the plurality of quote servers, the load balancer being configured to distribute quote activity requests among the plurality of quote servers.

Bowman-Amuah discloses a load balancer that mediates the request, otherwise known as workload balancing (See figure 151 and column 98, lines 22-49, which discusses how load balancing functionality effectively reduces the number of connections to databases, conserves the resources of the data servers, and increases throughput of the system). Therefore, it would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a load balancer capable of distributing quote activity requests over a plurality of

servers as taught by Bowman-Amuah in order to combine the known features of trading systems and load balancing to achieve the predictable result of utilizing load balancing in a trading system to conserve resources and increase throughput.

Claims 15 & 33 recites equivalent limitations to claims 12-14, respectively, and is therefore rejected using the same art and rationale set forth above.

8. **Claims 82 & 91-93** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulinder et al. (U.S. 2002/0073018), and further in view of Toffey (U.S. 2004/0236668).

As per claim 82, Mulinder et al. teaches an automated financial instrument brokerage system configured to process activity requests related to financial instruments, the system comprising a first layers for interacting with users to generate activity requests, a second layer in communication with the first layer, wherein the second layer is configured to process activity requests, a method comprising:

providing applications that are configured to generate activity requests related to financial instruments in response to user input (See paragraphs 9 & 45, which discusses multiple applications, including a price request application program interface for trading securities);

providing a common interface for each application to communicate the activity requests (See paragraphs 9 & 43, which discusses various servers and modules);

receiving activity from the common interfaces (See paragraphs 19-23, which discusses various requests, including a price request and block trade request); and

processing activity requests independently of the application from which those activity requests originated (See figures 1 & 2, which illustrates a system for providing trading services).

Mulinder et al. discloses all the elements of the claimed invention, however, Mulinder et al. does not disclose a first layer and a second layer.

It would have been an obvious matter of design choice to include multiple layers: a first layer and a second layer, since Applicant has not disclosed that a first layer and a second layer is for any particular purpose, and it appears that the invention would perform equally well with one layer containing multiple applications, servers, and memory. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include multiple layers with multiple applications, servers, and data sources in order to allocate the tasks to various applications and servers to help reduce bandwidth bottlenecks and to help increase the benefits from economies of scale in addition to offering increased security, excellent data management, fast response, and room for expansion.

Mulinder et al. discloses all the elements of the claimed invention, however, Mulinder et al. does not disclose a plurality of heterogeneous applications.

Toffey discloses a trading platform that provides a full electronic and seamless solution to all substantial aspects of a trading cycle for financial instruments (See abstract).

Both Mulinder et al. and Toffey disclose methods and systems of trading financial instruments. Toffey discloses multiple heterogeneous applications, including a

computer, telephone, and a personal digital assistant (PDA) (See paragraphs 60 & 68, which discusses executing trades via telephone, computer, or PDA). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a plurality of heterogeneous applications including a computer, a telephone, and a PDA as taught by Toffey in order to provide multiple applications for executing a financial trade.

As per claim 91, Mulinder et al. does not disclose wherein the plurality of heterogeneous applications comprises at least two selected from the group consisting of: a web site, a telephone, a touchtone telephone, a voice recognition application, a cell phone, a pager, a personal digital assistant, a computer, a Windows trading application server, and a Java trading application server.

Toffey discloses multiple heterogeneous applications, including a computer, telephone, and a personal digital assistant (PDA) (See paragraphs 60 & 68, which discusses executing trades via telephone, computer, or PDA). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a plurality of heterogeneous applications including a computer, a telephone, and a PDA as taught by Toffey in order to provide multiple applications for executing a financial trade.

As per claim 92, Mulinder et al. does not disclose wherein the plurality of heterogeneous applications comprises at least three selected from the group consisting of: a web site, a telephone, a touchtone telephone, a voice recognition application, a

cell phone, a pager, a personal digital assistant, a computer, a Windows trading application server, and a Java trading application server.

Toffey discloses multiple heterogeneous applications, including a computer, telephone, and a personal digital assistant (PDA) (See paragraphs 60 & 68, which discusses executing trades via telephone, computer, or PDA). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a plurality of heterogeneous applications including a computer, a telephone, and a PDA as taught by Toffey in order to provide multiple applications for executing a financial trade.

As per claim 93, Mulinder et al. does not disclose wherein the plurality of heterogeneous applications comprises a web site, a cell phone, a personal digital assistant, a computer, a Windows trading application server, and a Java trading application server.

Toffey discloses multiple heterogeneous applications, including a computer, telephone, and a personal digital assistant (PDA) (See paragraphs 60 & 68, which discusses executing trades via telephone, computer, or PDA). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a plurality of heterogeneous applications including a computer, a telephone, and a PDA as taught by Toffey in order to provide multiple applications for executing a financial trade.

9. **Claims 17 & 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulinder et al. (U.S. 2002/0073018), and further in view of Official Notice.

As per claim 17, Mulinder et al. does not disclose wherein the resident memory is application-in-memory cache.

The Examiner takes Official Notice that it is old and well known in the art to store memory on a cache. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include storing memory on an application-in-memory cache in order to making accessing memory a faster process.

Claim 19 recites equivalent limitations to claim 17 and is therefore rejected using the same art and rationale set forth above.

10. **Claims 22-26, & 83-86** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulinder et al. (U.S. 2002/0073018), in view of Toffey (U.S. 2004/0236668), and further in view of Official Notice.

As per claim 22, Mulinder et al. does not disclose wherein a plurality of the front end applications are heterogeneous applications configured to communicate with the intermediate layer through a plurality of common component object model (COM) objects.

Toffey discloses multiple heterogeneous applications, including a computer, telephone, and a personal digital assistant (PDA) (See paragraphs 60 & 68, which discusses executing trades via telephone, computer, or PDA). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include a plurality of heterogeneous applications including a

computer, a telephone, and a PDA as taught by Toffey in order to provide multiple applications for executing a financial trade.

Furthermore, the Examiner takes Official Notice that it is old and well known in the art to use component object model to assemble programs or add functionality to existing programs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Mulinder et al. and Toffey combination to include a component object model in order to link programs and add functionality.

As per claim 23, Mulinder et al. teaches order activity requests stored on an order server (See paragraphs 12 & 44, which discusses processing a trade in a security).

However, the Mulinder et al. and Toffey combination does not disclose wherein the front layer COM objects include a COM object for communicating order activity requests to the order server.

The Examiner takes Official Notice that it is old and well known in the art to use component object model to assemble programs or add functionality to existing programs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Mulinder et al. and Toffey combination to include a component object model that allows communication with order requests on an order server in order to link programs and add functionality.

As per claim 24, Mulinder et al. teaches wherein the intermediate layer further comprises at least one trading administration database for storing administrative

restrictions related to activity requests (See paragraphs 46 & 49, which discusses spread rules and dealer intervention rules).

However, the Mulinder et al. and Toffey combination does not disclose wherein the front end layer COM objects further include COM object for validating an order activity request against restrictions stored in the trading administration database prior to forwarding that order activity request to the order server.

The Examiner takes Official Notice that it is old and well known in the art to use component object model to assemble programs or add functionality to existing programs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Mulinder et al. and Toffey combination to include a component object model capable of validating trade requests against intervention in order to link programs and add functionality.

As per claim 25, Mulinder et al. teaches customer account activity requests stored on a customer account server (See paragraphs 13, 43, & 49, which discusses monitoring a clients trading patterns and market activity, thereby creating a client account; and, furthermore, a communication server that manages access to trading date; it is inherent the system contains memory).

However, the Mulinder et al. and Toffey combination does not disclose wherein the front end layer COM objects further include a COM object for communicating customer account activity requests to the customer account server.

The Examiner takes Official Notice that it is old and well known in the art to use component object model to assemble programs or add functionality to existing

programs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Mulinder et al. and Toffey combination to include a component object model that allows communication with customer account activity requests on an customer account server in order to link programs and add functionality.

As per claim 26, Mulinder et al. teaches quote activity requests stored on a quote server (See paragraphs 11-13 & 43-44, which discusses a quote engine capable of providing a plurality of quotes, each of which has a specified duration).

However, the Mulinder et al. and Toffey combination does not disclose wherein the front end layer COM objects further include a COM object for communicating quote activity requests to the quote server.

The Examiner takes Official Notice that it is old and well known in the art to use component object model to assemble programs or add functionality to existing programs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Mulinder et al. and Toffey combination to include a component object model that allows communication with quote activity requests on an quote server in order to link programs and add functionality.

Claims 83-86 recite equivalent limitations to claims 22-23 & 25-26, respectively, and are therefore rejected using the same rationale set forth above.

Response to Arguments

11. Applicant's arguments, see pg. 14 of the Remarks, filed October 6, 2008, with respect to the objection of **claims 20 & 22** have been fully considered and are persuasive. The objection of **claims 20 & 22** has been withdrawn.

12. Applicant's arguments, see pgs. 14 & 15 of the Remarks, filed October 6, 2008, with respect to the 35 U.S.C. § 101 rejection of **claims 1-35 & 82-86** have been fully considered and are persuasive. The 35 U.S.C. § 101 rejection of **claims 1-35 & 82-86** has been withdrawn.

13. Applicant's arguments filed October 6, 2008, have been fully considered but they are not persuasive.

In the Remarks, Applicant argues in substance that:

(a) **Claims 82-86** are not indefinite under 35 U.S.C. § 112, second paragraph.

(b) Mulinder et al. does not disclose "a front end layer," "an intermediate layer," and "a back end layer" as expressly recited in independent **claim 1**.

In response to (a):

The Examiner respectfully disagrees with Applicant's assertion. Applicant asserts that **claims 82-86** would not be indefinite because a person of ordinary skill in the art would readily understand that **claim 82** is directed toward a method comprising a plurality of steps. The Examiner maintains that the preamble of **claim 82** recites "In an automated financial instrument brokerage system configured... a method comprising." Since the preamble expressly recites both a system and a method it is unclear which statutory category the claim is directed to. The Examiner recommends Applicant either

remove the system recitation or the method recitation to make the preamble clear, thus avoiding any ambiguity regarding the preamble as a limitation.

In response to (b):

Applicant's arguments with respect to whether Mulinder et al. anticipates **claims 1-11, 16, 18, 20-21, 27-32, 34-35, & 82** have been considered but are moot in view of the new grounds of rejection. Regardless, the Examiner maintains that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Mulinder et al. to include the claimed multiple layers, servers, applications, and data sources. It is the Examiner's position that absent evidence of new or unexpected results, it is not inventive in terms of patentability to take one or more layers, servers, applications, and data sources which perform one or more tasks and add (or subtract) an additional number of layers, servers, applications, and data sources to perform all or part of the same tasks by allocating the tasks between the various. The prior art is replete with examples showing why such scaling (both increasing and decreasing the number of servers, data sources, applications, data sources, etc) is desirable. See *e.g.* Chrabaszcz (U.S. 6,363,497).

In other words, a modification increasing the number of servers (*e.g.* having two servers perform a task previously performed by one server) is analogous to making functions, structures, or actions separable. It is the Examiner's position that when the difference between the claimed invention and the prior art is that the prior art does not disclosed an element as separable, as a matter of law, it would have been obvious to one having ordinary skill in the art to make the element separable. See MPEP

§2144.04 V. C. and *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961). As noted above, it is desirable to allocate tasks to various servers to help reduce bandwidth bottlenecks and to help increase the benefits from economies of scale in addition to offering increased security, excellent data management, fast response, and room for expansion.

The Examiner invites Applicant to assert any new or unexpected results regarding their hardware configuration (and the software running their hardware configuration) of their brokerage system.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Penney et al. (U.S. 2004/0143539) discloses a method and apparatus for trading assets.

Penney et al. (U.S. 2003/0149653) discloses a method and apparatus for conducting financial transactions.

Mulinder et al. (U.S. 7,340,460) discloses real-time trading system.

Fijolek et al. (U.S. 7,068,597) discloses a system and method for automatic load balancing in a data-over-cable network.

Lewis (U.S. 6,513,019) discloses financial consolidating and communication platform.

Kitchen et al. (U.S. 2003/0018561) single party buying and selling commodities with multiple counterparties.

Kitchen et al. (U.S. 2002/0138400) discloses buying and selling goods and services using automated method and apparatus.

Chrabaszcz (U.S. 6,363,497) discloses a system for clustering software applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL R. ZECHER whose telephone number is (571)270-3032. The examiner can normally be reached on M-F 7:30-5:00 alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Kalinowski can be reached on 571-272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander Kalinowski/

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Supervisory Patent Examiner, Art
Unit 3691

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Examiner, Art Unit 3691